

WHAT IS CLAIMED IS:

1. A method of forming a well in a semiconductor device, comprising  
the steps of:
  - forming a trench in a semiconductor substrate using a patterned pad
  - 5 nitride film as an etch mask so that a field region is opened;
  - forming an oxide film along the surface of the trench;
  - performing an additional ion implantation process to form an additional ion implantation layer on the sidewalls of the trench;
  - filling the trench with an insulating material to form a field oxide film;
- 10 and
  - removing the pad nitride film and then forming a well within the semiconductor substrate by means of a well ion implantation process and a subsequent annealing process.
- 15 2. The method as claimed in claim 1, wherein the additional ion implantation process includes implanting an ion in a tilt of 3° to 10° and rotating the device 4 times.
- 20 3. The method as claimed in claim 1, wherein the additional ion implantation process and the well ion implantation process use the same impurity ion.